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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,004	04/30/2001	Robert M. Krupp	5702-01017	3374

26659 7590 09/10/2002

DINNIN & DUNN, P.C.  
TOP OF TROY BUILDING  
755 WEST BIG BEAVER ROAD  
TROY, MI 48084

EXAMINER

LUM, LEE S

ART UNIT	PAPER NUMBER
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3611

DATE MAILED: 09/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/846,004

Applicant(s)

KRUPP ET AL.

Examiner

Ms. Lee S. Lum

Art Unit

3611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1A. **Claims 1, 2 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen et al 4005876.

Jorgensen discloses a gas generator for a vehicle occupant protection system comprising

Elongated housing 12 having first and second ends (inherent),  
Plurality of gas exits 18 spaced along the housing,  
Propellant body 10 within, and substantially coextensive with, the housing,  
Ignition body 8 substantially coextensive, and in physical contact, with the propellant (Fig 1),

Wherein ignition of the ignition body essentially provides uniform ignition and combustion of the propellant body along the entire length thereof (inherent),  
Perforated (perforations 20) sleeve 5 within, and substantially coextensive with, the housing, and,

Annular filter 11 substantially coextensive within the housing, and encasing the sleeve.

Art Unit: 3611

The patent does not disclose the ignition body as having a burn rate at least twice that of the propellant body, but this characteristic would be dependent on the particular composition of the ignition and propellant bodies, i.e., application-specific, but clearly would be within the scope of the disclosed invention. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include parameters defining burn rate as a function of the composition of the ignition material, as a suggestion towards the applicability of the gas generator in different scenarios.

1B. **Claims 6, 7, 10 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen in view of Lee et al 6315847.

Jorgensen does not disclose specific propellant components, while Lee shows the propellant comprising a mixture of

Silicone at about 10-25% by weight (col 3, lines 27 and 38-39),

Oxidizer at about 75-90% by weight, including ammonium perchlorate (col 3, lines 51-58).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to include these elements, as shown in Lee, to provide one of a multitude of viable propellant compositions with certain desired ignition, and other, characteristics.

Art Unit: 3611

1C. **Claims 8, 11 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen in view of Lee and Yoshida et al 5827996.

Re **Claims 8 and 14**, Jorgensen, in view of Lee, does not specify the propellant as including strontium carbonate as a coolant at about 1-30% by weight, while Yoshida shows this element in col 3, lines 52 and 62-63; "also used as...burning control agent", and in col 7, lines 20-24; "burn control agent in an amount of about 0.1 - 50 wt parts".

It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this element, as shown in Yoshida, to provide one of many possible coolant materials for the propellant mixture.

Re **Claim 11**, the combination of patents disclose the recited elements as previously described.

1D. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen in view of Yoshida.

See preceding paragraph 1C.

1E. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen in view of Lee and Yoshida, and in further view of Lundstrom et al 6077371.

Art Unit: 3611

The previous patents do not disclose a slag forming element, while Lundstrom shows this element in col 7, lines 4-8, including "alumina...and mixtures thereof...of 0-10% by weight". It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this element, as shown in Lundstrom, to form slag to minimize the formation of solid decomposition products, thus minimize the amount of particulates aggregating in the filters.


3. **Claims 3 and 5** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The prior art made of record, and not relied upon, is pertinent to the Applicant's disclosure, in addition to the art listed on the IDSs filed 7/2/01, 8/3/01: Yoshikawa et al 6416599, Kanda et al 6177028, Hinshaw et al 6039820, Canterberry et al 6019861, Poole 5139588.

5. Communication with the Examiner and USPTO

Any inquiry concerning this communication should be directed to Ms. Lum at (703) 305-0232, 9-530, M-F. Our fax number is (703) 308-2571. Any inquiry of a general nature, or relating to the status of this application/proceeding should be directed to Customer Assistance at (703) 306-5771.

Ms. Lee S. Lum  
Examiner  
9/3/02



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9/4/02